What is claimed is:

1. A method of producing aluminum comprising:

passing current between a stable anode comprising iron oxide and a cathode through a bath comprising an electrolyte and aluminum oxide;

maintaining the bath at a controlled temperature;

controlling current density through the anode; and

recovering aluminum from the bath.

2. The method of Claim 1, wherein the controlled temperature of the bath is less than about 960°C.

3. The method of Claim 1, wherein the controlled temperature of the bath is from about 800 to about 930°C.

4. The method of Claim 1, wherein the current density is from about 0.1 to about 6 Amp/cm^2.

5. The method of Claim 1, wherein the current density is from about 0.25 to about 2.5 Amp/cm^2.

6. The method of Claim 1, wherein the iron oxide comprises at least 50 weight percent of the anode.

7. The method of Claim 1, wherein the iron oxide comprises at least 90 weight percent of the anode.

8. The method of Claim 1, wherein the iron oxide comprises from zero to 100 weight percent Fe_3O_4, from zero to 100 weight percent Fe_2O_3, and from zero to 50 weight percent FeO.

9. The method of Claim 1, wherein the iron oxide comprises Fe_3O_4.

10. The method of Claim 1, wherein the iron oxide comprises Fe_2O_3.

11. The method of Claim 1, wherein the iron oxide comprises FeO.

12. The method of Claim 1, wherein the iron oxide further comprises up to about 90 weight percent of an additive.

13. The method of Claim 12, wherein the additive comprises an oxide of Al, Si, Ca, Mn, Mg, B, P, Ba, Sr, Cu, Zn, Co, Cr, Ga, Ge, Hf, In, Ir, Mo, Nb, Os, Re, Rh, Ru, Se, Sn, Ti, V, W, Zr, Li, Ce, Y and/or F.

14. The method of Claim 12, wherein the additive comprises an oxide of Al, Si, Ca, Mn and/or Mg.

15. The method of Claim 1, wherein the recovered aluminum comprises less than about 0.5 weight percent Fe.

16. The method of Claim 1, wherein the recovered aluminum comprises less than about 0.4 weight percent Fe.

17. The method of Claim 1, wherein the recovered aluminum comprises less than about 0.3 weight percent Fe.

18. The method of Claim 1, wherein the recovered aluminum comprises a maximum of about 0.2 weight percent Fe, a maximum of about 0.034 weight percent Cu, and a maximum of about 0.034 weight percent Ni.

19. A stable anode comprising iron oxide for use in an electrolytic metal production cell.

20. The stable anode of Claim 19, wherein the iron oxide comprises from zero to 100 weight percent Fe_3O_4, from zero to 100 weight percent Fe_2O_3, and from zero to 50 weight percent FeO.

21. The stable anode of Claim 19, wherein the iron oxide comprises Fe_3O_4.

22. The stable anode of Claim 19, wherein the iron oxide comprises Fe_2O_3.

23. The stable anode of Claim 19, further comprising up to about 90 weight percent of an additive selected from oxides of Al, Si, Ca, Mn, Mg, B, P, Ba, Sr, Cu, Zn, Co, Cr, Ga, Ge, Hf, In, Ir, Mo, Nb, Os, Re, Rh, Ru, Se, Sn, Ti, V, W, Zr, Li, Ce, Y and/or F.

24. The stable anode of Claim 19, wherein the anode comprises a monolithic body comprising the iron oxide.

25. The stable anode of Claim 19, wherein the anode comprises a surface coated with the iron oxide.

26. The stable anode of Claim 19, wherein the anode remains stable in a molten bath of the electrochemical cell at a temperature of up to 960°C.

27. An electrolytic aluminum production cell comprising:

a molten salt bath comprising an electrolyte and aluminum oxide maintained at a controlled temperature;

a cathode; and

a stable anode comprising iron oxide.

28. The electrolytic aluminum production cell of Claim 27, wherein the controlled temperature of the molten salt bath is less than about 960°C.

29. The electrolytic aluminum production cell of Claim 27, wherein current is passed through the anode at a current density of from 0.1 to 6 Amp/cm^2.